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WITH THE CORN BORER

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NEW YORK LAUNCHES SPRING EDUCATIONAL PROGRAM

SPRING corn-borer educational work in New York is now well under way, with definite plans for each of the four counties included in the regulatory work. These plans were decided upon at recent county conferences representing county and town corn-borer committees, county agents, specialists from the State college, and special corn-borer agents. Each phase of the program has been assigned to one of the cooperating agencies which will be responsible for that work.

During March every opportunity will be utilized to have speakers appear before meetings of farmers, farm bureaus, Granges, dairymen's leagues, and also such organizations as the Rotary Club, Kiwanis Club, and Boy Scouts to explain the borer situation and methods of controlling it. It is planned to give the work publicity through news stories and the distribution of informative material.

The exhibit truck fitted up at Toledo headquarters will be routed through this territory during March and April and will play an important part in the educational work. This exhibit will be available at most of the meetings in connection with short educational talks. It is also planned to use the radio stations WGR and WMAK, Buffalo, to broadcast control information over borer-infested western New York.

Plowing and fitting demonstrations will be held in April throughout the control area. Niagara County, where the regulatory measures will be in effect this year for the first time, is planning demonstrations in each of its 12 townships. The other counties will hold demonstrations in townships that have been added to the control area this year and also in other townships where such educational features are believed to be needed.

The regulatory area in New York includes 60 townships in Erie, Niagara, Cattaraugus, and Chautauqua Counties, about twice the area included last year.

Address communications to Information Division, Corn-Borer Control, Extension Service, United States Department of Agriculture, Washington, D. C.

RESEARCH SECTION

INSECTICIDE CONFERENCE — Specialists in the use of insecticides met March 16 in Toledo, Ohio, at corn-borer headquarters, 615 Front Street. Scientists from the various States working on corn-borer problems, representing the agricultural colleges, experiment stations, and the United States Department of Agriculture were present to discuss further research on insecticide control of the corn borer.

Some of the topics discussed were the method of application, spraying, dusting, and the taking of data; the selection of an experimental field; arrangement of experimental plots; determination of climatological and ecological factors; uniform infestation notes and materials to be used.

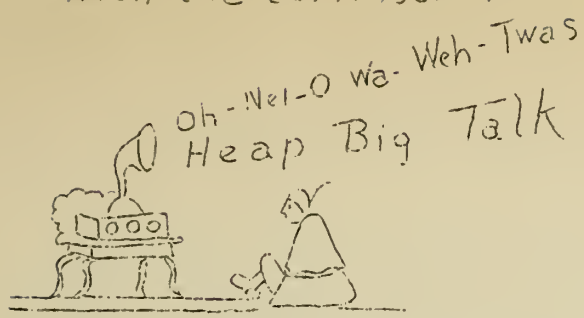
The plans for research in insecticides include experiments with various kinds of arsenicals, emulsified extracts, oil emulsions, silico-fluorides, and other insecticides to test their effectiveness under varying conditions and methods of application.

COMMITTEE ON RESEARCH — The committee appointed to review and allocate the research program as presented at the research conference, held January 3 in Washington, D.C., met at the insecticide conference in Toledo, Ohio. George A. Dean, of Kansas, is chairman of this committee, representing the American Association of Economic Entomologists.

INDIANA RESEARCH IN AGRONOMY — The Indiana Agricultural Experiment Station plans to continue the experiments begun last year on corn investigations with varieties, dates, and rates of planting and the effect of fertilizer in hastening maturity, at four experiment farms in Indiana. In all, 30 varieties of corn are being used in these experiments.

Work in the northern part of the State is carried on at Wanatah, La Porte County, and Auburn, De Kalb County; and in central Indiana at La Fayette and Farmland, Randolph County.

The experiments under way noware intended to arm Indiana corn growers with high-yielding early varieties and to give them established facts as to the best rate of planting and use of fertilizer to aid them in their fight against the corn borer.



Seneca braves in western New York State soon will have the opportunity of hearing about Oh-Nei-O-Wa-Weh-Twas, meaning corn borer in the ancient Iroquois language, over the radio in their own language. The talk on corn-borer control measures will be given by Russell Hill, a young Seneca who has been appointed special Indian corn-borer agent. This will be the first time a radio talk has been given in Indian by an Indian and for Indians.

In the old times, when an emergency beset the Iroquois Confederacy, a runner was dispatched to the different nations, and a joint conference of the chiefs was called. That is what happened the other day, when Agent Hill visited the Seneca reservations, found the corn borer much alive and active, and called a council of chiefs to deal with the situation.

Friday, March 16, was the day set for the powwow, which included members of the Indian corn-borer committee from the Tuscarora, Tonawanda, Cattaraugus, and Allegany Reservations.

"The Indian," says Agent Hill, "can not help feeling a little resentment against the white man on the corn-borer question. In the words of an old chief of the Tonawanda Reservation, 'Indians gave you corn. You give us Oh-Nei-O-Wa-Weh-Twas.'"

HOW TO MAKE A STALK SHAVER

Drawings, descriptions, and suggestions on how to make a homemade stalk shaver have been made available to farmers in the infested area. The pamphlet may be of help to those who plan to shave off cornstalks at the ground surface preparatory to raking and burning the stalks. The directions are sent out from Corn Borer Control Headquarters, 315 Front Street, Toledo, Ohio.

AGRICULTURAL TEACHERS READY TO HELP

E. E. Gallup, supervisors of agricultural education in Michigan, writes that the vocational agricultural teachers and their students will be glad to cooperate in every way in extending information on corn-borer control methods.

Ray Fife, State supervisor, Agricultural Education Service in Ohio, reports that the majority of the teachers like to provide for current discussion in their classes. To furnish the necessary information, "Questions and Answers on the European Corn Borer " and "With the Corn Borer" are being sent to agricultural teachers in the infested area.

NEW PICTURES TO BE TAKEN

The story of spring control practices and successful farmers who follow them will be the theme of the new pictures to be taken during the next two months in the infested area. These pictures will be taken by George W. Ackerman, extension photographer for the United States Department of Agriculture. The new picture will be made available to extension workers in the States for use in the cut service and for other educational uses. Mr. Ackerman will be in Ohio from March 27 to 30 and in Michigan April 17 to 20.

B. R. Proulx, district agent in corn-borer information, Michigan, has made a good outline of the photographs to be taken which may prove helpful to others planning photographic trips. This outline was sent to county agents in the infested area for their suggestions as to where and when the pictures could be obtained and any other suggestions they had to offer.

Exhibit A. Ideal control practices:
- (1) Low cutting.
- (2) Ensiling and saredding.
- (3) Plowing short stubble.
- (4) Fitting land with cultipacker.
- (5) Use of spike-toothed harrow (teeth sloping back).
- (6) Drilling in clean field.

Exhibit B. What not to do:
- (1) Standing corn with poor plowing.
- (2) Spring-toothed harrow dragging up stalks.
- (3) Hand picking (expensive and tedious).

Exhibit C:
- (1) Clean plowing in standing corn.
- (2) Dragging up stalks with spring-toothed harrow.
- (3) Hand picking (undesirable practice).

Exhibit D:
- (1) Long stubble.
- (2) Use of T-rail or heavy pole.
- (3) Clean plowing.

Exhibit E:
- (1) Standing corn.
- (2) Cutting, raking, burning.
- (3) Clean plowing.

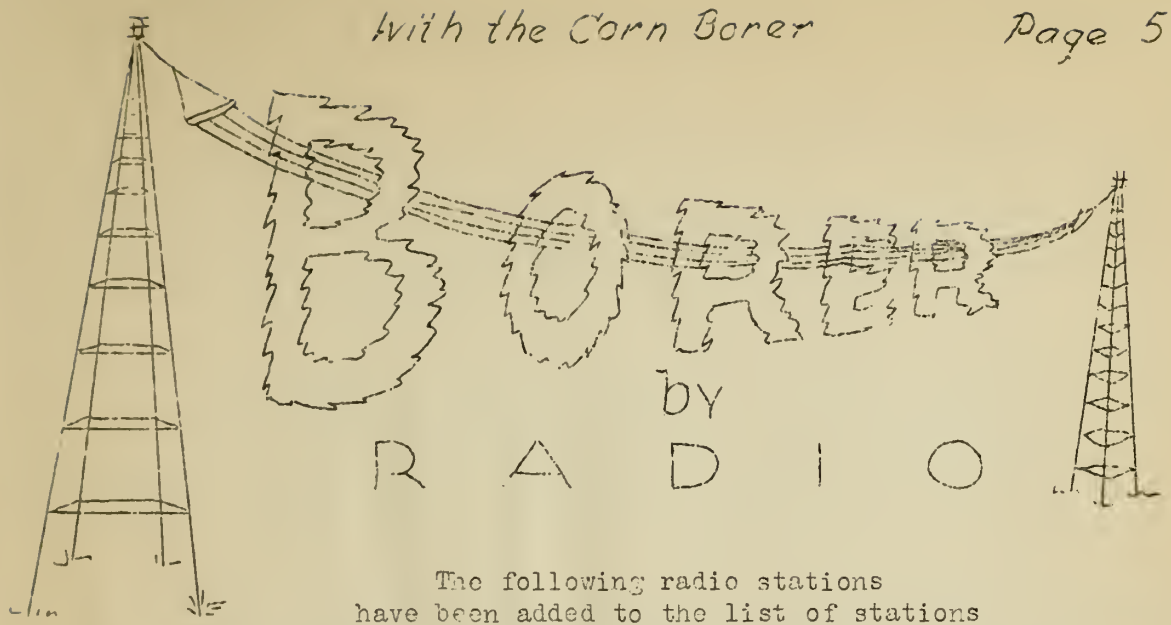
Exhibit F:
- (1) Plowing with narrow plow.
- (2) Plowing with wide-bottom plow.

Exhibit G: Human-interest pictures:
- (1) Prominent farmers successfully carrying out control measures.

Exhibit H:
- (1) Standing corn in subdivisions around cities.
- (2) Clean-up operations on such properties.

Exhibit I:
- (1) Practical homemade devices or adaptation of farm machinery to control practices.

Exhibit J:
- (1) Clean-up on smooth field.
- (2) Clean-up on hilly field.
- (3) Clean-up on stony field.
- (4) Clean-up on muck lands.



The following radio stations
have been added to the list of stations
broadcasting the special series of corn-borer releases
March 5 to April 30.

Iowa.....KMA, Shenandoah, Monday, 12.30 p.m.

Ohio.....WHK, Cleveland, Monday, 1 p.m.

Pennsylvania.WGBI, Scranton, Monday, 7 p.m.

A specialist of the U. S. Department of Agriculture supplies facts about the borer and just how to carry on one of the most important spring control measures--clean plowing.

In Kent County, Ontario, Canada, John Johnson farms 150 acres of good land. Until two years ago his main source of income was Flint corn, which he sold for seed. The 50 acres he usually planted to corn yielded from 500 to 1,000 bushels, according to the season. Then came the corn-borer invasion. In 1926 Johnson reduced the corn acreage to 19 because of borer damage. He got only 200 bushels from the 19 acres. Last year he cut his corn planting to 10 acres. This year he doesn't intend to grow corn. He replaces the corn with beans, cabbage, and more wheat.

Johnson estimates conservatively that the corn borer has decreased his income $500 per year.

His experience is a pretty good answer to the question sometimes raised -- does the corn borer menace the corn crop of the United States? It's a startling answer, true enough, But there is this encouraging footnote to Johnson's story. He believes that a smaller corn acreage for a few years and a permanent clean-up can hold the pest in check. That he's correct is indicated by the fact that the Ontario clean-up in the spring of 1927 reduced corn-borer infestation 50 per cent. The Canadians, along with farmers of the United States, are learning to live with the corn borer and to keep it under control.

It seems worth while to try to keep down borer damage when we recall that the fight is made to protect a crop valued annually at about $2,000,000,000, a crop, moreover, on which our great livestock industry depends.

Joe Srigley, another Ontario farmer living in Kent County, has a true story to tell that indicates how the corn borer affects stock raising.

Sridley used to specialize in hogs, selling as much as $1,500 worth of hogs each year. The corn borer has forced him to shift to poultry. Last year he planted 4 acres of corn. Before the corn borer came to Ontario and started eating the corn he used to feed the hogs, he planted 50 acres. Now he keeps a flock of 750 chickens and a herd of 10 dairy cows to take the place of hogs and corn.

But of course farmers in this region know the mischief done by the corn borer. Right now they are planning the spring operations necessary to bring the borer under control. One of the most important of these operations is clean plowing, and the remainder of this talk will be devoted to answering five questions about plowing that are continually cropping up. The first is:

Does plowing kill the borer?

And the answer is that the mere plowing of infested cornstalks does not of itself kill many borers. Most of the pests crawl up to the surface soon or late. But notice this: If a clean job of plowing is done, borers coming to the surface can't find any shelter. Exposed to the weather and to the attacks of their natural enemies--birds,ants,ground beetles, and various insect parasites and predators--they soon perish.

On the other hand, if the plowing job isn't cleanly done, the borers reaching the surface lodge in fragments of corn husks, cornstalks, corn leaves,stubble, and weeds and remain snugly housed until they emerge as moths to lay the eggs from which the 1928 army of borers will come.

Now you naturally want to know just what is a clean job of plowing for borer control.

It is plowing which leaves no plant material of any kind on the surface. Not only that; all fragments which might shelter borers must be buried so thoroughly that none will be dragged to the surface later in disking and cultivating. To insure this result, plowing to a depth of 6 inches is recommended; also surface cultivation after plowing to close all large cracks and crevices. But if it isn't possible to plow to a depth of 6 inches, a clean job still can be done by skillful plowmen. The depth isn't important, so long as all fragments are covered to stay covered.

Poor or ordinary plowing does not control the corn borer, and in a good many ways is worse than no attempt to cover litter because it is difficult to clean up a poorly plowed field by other methods.

Now, I can hear you asking, "How is a clean job of plowing done?"

As I've just said, the skill of the plowman is just as important as the size or type of plow used. Careful, painstaking work to see that all surface refuse is turned under is the first essential. As to the kind of plow: A

14-inch bottom plow equipped with attachments for covering trash gives good results when properly adjusted.

Many farmers have found that fastening three No. 9 galvanized or wrought iron wires to the plow helps to cover the trash securely. These wires are about 10 feet long and trail behind the plow. The loose ends are caught by the furrow slice as it turns over. The weight of the soil on the buried ends holds the wire taut, and the wires hold the trash and stalks to the bottom of the furrow slice.

New, especially designed 16-inch and 18-inch plows well adapted for clean plowing have recently been placed on the market. They do good work in fields of standing cornstalks. Field tests with these plows showed that with the aid of a rolling coulter of proper size and of the wires just described they completely turn under all standing cornstalks and all trash.

And now, finally, what is the best time to plow for borer control?

Experiments have shown that in the Middle West the time of plowing is not important as far as destruction of the corn borer is concerned. If the stalks are plowed under during the late summer or early fall, or in the spring, most of the borers leave the stalks and crawl to the soil surface looking for shelter there soon after plowing. If the stalks are plowed under in the late fall most of the borers remain inactive in the stalks all through the winter and come to the surface in the spring after the soil warms in April or May.

The important thing is not the time of plowing, but the certainty that there is no debris left on the surface to shelter the corn borer.

Just a brief summary of the important things to remember about spring plowing to control the corn borer:

First, if plowing is to be effective all trash must be turned completely under so that material may not by later cultivation be dragged to the surface before time for the moths to emerge.

Second, clean plowing controls borers by depriving them of shelter when they crawl to the surface.

Third, average plowing methods must be improved sufficiently to insure that all cornstalks and trash are turned completely under.

Fourth, neither depth of plowing nor time of plowing is important for borer control if a clean job is done and material is not afterward dragged to the soil surface.

Fifth, and last, for a more extended discussion of corn-borer control methods, see Farmers' Bulletin No. 1-5-4-8, issued by the United States Department of Agriculture.